



Smoking cessation prior to elective plastic surgery: why, when and how?

Citation

Theocharidis, Vasileios, and Konstantinos P Economopoulos. 2014. "Smoking cessation prior to elective plastic surgery: why, when and how?" Tobacco Induced Diseases 12 (Suppl 1): A18. doi:10.1186/1617-9625-12-S1-A18. <http://dx.doi.org/10.1186/1617-9625-12-S1-A18>.

Published Version

doi:10.1186/1617-9625-12-S1-A18

Permanent link

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MEETING ABSTRACT

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Smoking cessation prior to elective plastic surgery: why, when and how?

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From 11th Annual Conference of the International Society for the Prevention of Tobacco Induced Diseases (ISPTID)

Athens, Greece. 9-11 December 2013

Background

Tobacco is a serious nuisance in plastic surgery, mainly through the effects of its inhaled constituents on wound healing physiology. While there are thousands of chemical compounds in the inhaled smoke, the most prominent ones are nicotine, carbon monoxide and hydrogen cyanide, which are partially responsible for impaired wound healing through decreased oxygen delivery and utilization, and deranged collagen deposition [1]. Our aim is to summarize the existing literature on the effects of smoking in various plastic surgical procedures, and on the correct timing and available methods of preoperative smoking cessation.

Materials and methods

A literature review of PubMed was performed. The inclusion criteria were: articles on the effects of smoking on wound healing, plastic surgery and hand surgery, on the timing of preoperative smoking cessation and on methods of smoking cessation. The search terms used in combinations were “smoking”, “plastic surgery”, “wound healing”, “hand surgery”, “smoking cessation”.

Results

In facelift procedures, skin slough is an important complication and there is a strong association between smoking and higher skin slough rates [2]. A similar relationship can be identified in abdominoplasty, as smokers suffer from a higher percentage of wound healing complications [3]. Complications like T-junction necrosis and infections were also higher in smokers who underwent breast reduction [4]. Regarding breast reconstruction, two studies showed higher rates of reconstructive failure and overall

complications in smokers [5]. However, no significant difference was found regarding flap loss and vascular thrombosis between smokers and non-smokers [6]. In microsurgical free flap transfer, the relationship visited above is prevalent, with higher wound healing-related complication rates for smokers. [7]. In hand surgery, it has been shown that smoking post-replantation decreases digital blood flow significantly [8]. A meta-analysis showed the detrimental effect of smoking on the success rate of digit replantation (61.1% in smokers vs. 96.7% in non-smokers) [9]. While there is no consensus regarding the optimal smoke-free period preoperatively, many authors agree that 4 weeks are capable of reducing the rates of smoking-related complications satisfactorily. Some authors support the use of cotinine measurement, as patient history can prove notoriously inaccurate [10]. In order to improve the low cessation rate achieved by no intervention (about 1 in 8) [11], nicotine replacement therapy and medication can be used effectively [12].

Conclusions

Smoking is an independent risk factor for wound healing complications, but not for free flap loss. Smokers who are candidates for plastic surgery should cease smoking for an adequate amount of time preoperatively. Nicotine replacement therapy and medication are effective in assisting their smoking cessation efforts.

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Published: 6 June 2014

References

1. Silverstein P: Smoking and wound healing. *Am J Med* 1992, **93**(1a):22-24.

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2. Rees TD, Liverett DM, Guy CL: **The Effect of Cigarette Smoking on Skin-Flap Survival in the Face Lift Patient.** *Plastic and Reconstructive Surgery* 1984, **73**(6):911-915.
3. Manassa EH, Hertl CH, Olbrisch RR: **Wound Healing Problems in Smokers and Nonsmokers after 132 Abdominoplasties.** *Plastic and Reconstructive Surgery* 2003, **111**(6):2082-2087.
4. Bikhchandani J, Varma SK, Henderson HP: **Is it justified to refuse breast reduction to smokers?** *Journal of plastic, reconstructive & aesthetic surgery.* *JPRAS* 2007, **60**(9):1050-1054.
5. McCarthy CM, Mehrara BJ, Riedel E, Davidge K, Hinson A, Disa JJ, Cordeiro PG, Pusic AL: **Predicting complications following expander/implant breast reconstruction: an outcomes analysis based on preoperative clinical risk.** *Plast Reconstr Surg* 2008, **121**(6):1886-92.
6. Chang DW, Reece GP, Wang B, Robb GL, Miller MJ, Evans GR, Langstein HN, Kroll SS: **Effect of smoking on complications in patients undergoing free TRAM flap breast reconstruction.** *Plast Reconstr Surg* 2000, **105**(7):2374-80.
7. Chang LD, Buncke G, Slezak S, Buncke HJ: **Cigarette smoking, plastic surgery, and microsurgery.** *J Reconstr Microsurg* 1996, **12**(7):467-74.
8. Van Adrichem LN, Hovius SE, van Strik R, van der Meulen JC: **The acute effect of cigarette smoking on the microcirculation of a replanted digit.** *J Hand Surg Am* 1992, **17**(2):230-4.
9. Dec W: **A meta-analysis of success rates for digit replantation.** *Tech Hand Up Extrem Surg* 2006, **10**(3):124-9.
10. Payne CE, Southern SJ: **Urinary point-of-care test for smoking in the pre-operative assessment of patients undergoing elective plastic surgery.** *J Plast Reconstr Aesthet Surg* 2006, **59**(11):1156-61.
11. Rinker B: **The evils of nicotine: an evidence-based guide to smoking and plastic surgery.** *Ann Plast Surg* 2013, **70**(5):599-605.
12. Mahvan T, Namdar R, Voorhees K, Smith PC, Ackerman W: **Clinical Inquiry: which smoking cessation interventions work best?** *J Fam Pract* 2011, **60**(7):430-1.

doi:10.1186/1617-9625-12-S1-A18

Cite this article as: Theocharidis and Economopoulos: Smoking cessation prior to elective plastic surgery: why, when and how? *Tobacco Induced Diseases* 2014 **12**(Suppl 1):A18.

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